CA2ALA 7
69 G61

CA2 ALA 7 1969G61
Grasshopper Control in Alberta.
1
3 3398 00128 8348

LIBRARY
VAULT 19

Revised 3M-3-69
Reprint 2M/7/72

TA DEPARTMENT OF AGRICULTURE

GRASSHOPPER CONTROL IN ALBERTA

Surveys of grasshopper adults and eggs are made annually by entomologists of the Canada Department of Agriculture, Research Branch. The information is compiled into a forecast map, which is printed and distributed by the Alberta Department of Agriculture. Farmers should check the map for information on the grasshopper potential for their district. Spring weather conditions have a considerable influence on the numbers of eggs that will hatch. A warm sunny spring with a few moist periods will allow the hoppers to hatch rapidly and evenly. When the weather is cool and wet, hatching will be sporadic and prolonged into the latter part of June. Such weather also tends to promote rapid crop growth, and by the time the hoppers have emerged, the crops are fairly well advanced and capable of overcoming much of the damage.

CULTURAL CONTROL

The following cultural control methods will vary in effectiveness depending on the species present but generally are effective in reducing grasshopper damage. Avoid creating conditions for soil drifting when working the land to combat grasshoppers.

(1) Shallow cultivate infested stubble fields in the fall to help destroy eggs by exposing them to predators and the elements. Tillage immediately after harvest, when feasible, will loosen the soil and discourage females from laying eggs.

(2) In the spring cultivate to destroy plant growth at hatching time and thus starve young hoppers. Grasshoppers must have a supply of fresh green food soon after hatching.

(3) Seed as early as possible as advanced crops are less readily damaged. Good seed, seed treatment, fertilizers, etc., will promote early, vigorous and fast growth.

(4) Cultivate a strip about 3 rods wide around the edge of fields to be summerfallowed. Work toward the centre until one or more narrow, uncultivated "trap strips" are left. The hoppers will tend to concentrate in the uncultivated areas, especially if they contain some green growth. Spray these trap strips promptly then cultivate them 1-2 days later. Be careful not to drive the hoppers into your own or your neighbor's adjacent fields.

(5) Weed free fields are less likely to suffer damage. Some hoppers must have a varied diet to survive and weeds may attract them. The use of 2, 4-D or M.C.P.A. will help keep crops free of weed growth.

(6) Summerfallow stubble fields in heavily infested areas.

CHEMICAL CONTROL

Chemical control is usually necessary during outbreaks. Spray as soon as young hoppers appear in threatening numbers. Hatching usually starts in mid-May or about the first leafing of poplars. Watch for hatching along headlands, road ditches, pastures and stubble fields. Chemical control is most effective when the young hoppers are still concentrated at the egg beds. After they move from these areas, control is usually effective by spraying margins of fields being invaded. Later entire fields will have to be sprayed as the hoppers will have scattered throughout the crop.

Insecticide sprays kill by contact and stomach action. Spraying may therefore be done at any time of the day. However better results will be obtained when temperatures are above 65°F. with very little wind. Usually the better time to spray is in the early morning or evening. There is less chance that drift will occur at these times. Do not spray wet foliage or when rain threatens. Apply the recommended type and amount of insecticide with enough water to get good coverage— usually 4 to 5 gallons per acre.

INSECTICIDE SPRAYS FOR USE ON ALL CROPS

(Check label for actual chemical content)

Dimethoate (4 lb./gal.) - 3 oz. actual per acre. One gallon of concentrate will treat 21 acres. Do not graze cattle on treated forage within 48 hours of application. Do not apply to cereals after heads appear and do not use on cereals or oil seed crops within 21 days of harvest. For mature grasshoppers and those over ½ inch in length an increase of up to double the rate per acre may be required. Use repeat application only when necessary.

Malathion (10 lb./gal.) - 12 oz. actual per acre. One gallon of concentrate will treat 13 acres. Crops may be fed to all livestock immediately after treatment. Malathion should not be used on oil seed crops within 7 days of harvest. It is less effective at lower temperatures —apply at 65°F. or higher.

Carbaryl (Sevin 10 lb. 80% SP) - 10 oz. actual per acre. One 10 lb. pack should treat 13 acres. Crops may be fed to all livestock immediately after treatment. Carbaryl should not be used within 14 days of harvest. It is a wettable powder and requires special mixing and adaptation of field sprayers. Follow label directions closely.

Do not use Carbaryl or Dimethoate on **bee pastures**. Use Malathion if control is essential. Avoid insecticide treatment during the bloom period, when bees are active as pollinators; apply when bees are absent i.e. in the evening. Notify beekeepers in the area before treating with insecticides.

Aeroplane application of the 10 pounds per gallon Malathion and the 4 pounds per gallon Dimethoate require special solvent additives if diesel fuel is used instead of water.

Check the label for special uses of any of these chemicals.

PRECAUTIONS

Before using or applying any insecticide READ THE LABEL—on the container for special warnings and cautions as well as mixing directions. Insecticides are chemicals that are poisonous to humans, livestock, fish and wildlife. Use extreme care not to contaminate drinking water, dugouts or fish habitat especially when cleaning or filling spray tanks. Follow label directions so as not to contaminate food or feed crops. Make sure proper insecticides are used on pasture and forage to avoid residue problems and the contamination of milk and meat products.

GRASSHOPPER CONTROL POLICY

The grasshopper control program is jointly administered by the Alberta Department of Agriculture and the Municipalities. The Department purchases the grasshopper insecticides and stocks them at strategic points for rapid transfer to outbreak areas. Shipping costs on outgoing chemicals are borne by the Department. Municipalities are responsible for storage and distribution to farmers at prices and conditions established under the Grasshopper Control Policy for the current year.

Farmers should apply to their Municipal office for a supply of available insecticide and obtain the latest information on its use and application.

This publication supersedes all previous issues of Publication 622-4-1 and contains the latest recommendations and restrictions regarding insecticides known at the time of preparation. For more detailed information consult your District Agriculturist or contact: Crop Protection and Pest Control, Department of Agriculture, Edmonton.

Prepared by:
Alberta Department of Agriculture,
Crop Protection and Pest Control,
EDMONTON, Alberta.

Distributed by:
Extension Service,
Alberta Department of Agriculture,
EDMONTON, Alberta.
or
Your District Agriculturist